**IMPLEMENTATION:**

**MODULES:**

* **User**
* **Admin**
* **Maternity user**
* **GA2M**

**MODULES DESCRIPTION:**

**User:**

The User can register the first. While registering he required a valid user email and mobile for further communications. Once the user register then admin can activate the customer. Once admin activated the customer then user can login into our system. The user can view the new born baby medical data which is provide by maternity user. Later in the programmatically we user sklearn logistic regression to get the scores of give data. We splited data as 70% for training and 30% for testing. The predicated result we can see. We are also calculating the accuracy, precession and recall of sklean.metrics of function. For each user result we are going to store in the database for future use.

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**Admin:**

Admin can login with his credentials. Once he login he can activate the users. The activated user only login in our applications. The admin can set the training and testing data for the project dynamically to the code. The admin can view all linear model results which is performed by the users. We can check the result variance of each users. The admin can also view all the results of Generalized Additive Model with Pairwise Interactions in his screen.

**Maternity User:**

The maternity user login in to our system which provide the credential by the programmer. Once the user login he can add the data like gestational week, mechanical ventilation, blood transfusion, late-onset sepsis, chorioamnionitis, preterm premature rupture of membranes, necrotizing enterocolitis. This data collected from various maternity home. If this data not available the user can not perform the prediction and accuracy. The user can also view all results of GA2M and Current results.

**Generalized Additive Model with Pairwise Interactions(GA2M):**

In this module we are trying to predict a categorical variable, whether the patient is diagnosed with severe RoP or not, we will use logistic regression instead of linear regression. Univariate logistic regression holds only one variable ln [Y / (1−Y ) ]=a + b 1 X 1 , while the formula for multivariate logistic regression is as follows: ln[ Y /(1− Y )]= a + b 1 X 1 + b 2 X 2 + b 3 X 3+... The generalized additive model (GAM) with only 1st order terms is equivalent to the equation above. If we want to add 2nd order terms, we would need to add them as follows: n[ Y /(1− Y )]= a + b 1 X 1 + b 2 X 2 + b 3 X 3+ b 12 X 1 X 2 + b 13 X 1 X 3+ b 23 X 2 X 3 +...

For example, for a GAM with 6 first-order variables (X 1 ,X 2 ,X 3 ,X 4 ,X 5 ,X 6 ) , there would be 6\*5/2=15 pairwise interaction terms. It is suggested to add only a few and only start with the most influential pairwise interactions. Thus, as we make our model more complex, we will add the pairwise interactions one by one.